

# American POTATO JOURNAL

*Official Organ of the Potato  
Association of America*

VOLUME 33

JANUARY - DECEMBER, 1956

## EDITORS

WM. H. MARTIN, *Honorary Editor*

J. C. CAMPBELL, *Editor*

E. S. CLARK, *Associate Editor*

RUTGERS UNIVERSITY, NEW BRUNSWICK, NEW JERSEY

R. W. HOUGAS, *President*

NOR PARKS, *Vice President*

W. J. HOOKER, *Secretary*

JOHN C. CAMPBELL, *Treasurer*

CECIL FRUTCHEY, *Past President*

## DIRECTORS

PAUL EASTMAN

ORRIN TURNQUIST

WM. G. HOYMAN

## SUSTAINING MEMBERS

STARKS FORMS INC.	Route 3, Rhinelander, Wisconsin
BACON BROTHERS	1425 So. Racine Ave., Chicago 8, Illinois
L. L. OLDS SEED CO.	Madison, Wisconsin
FRANK L. CLARK, Founder — Clark Seed Farms	Richford, New York
RED DOT FOODS, INC.	Madison, Wisconsin
ROHM & HAAS COMPANY	Washington Square, Philadelphia 5, Pennsylvania
WISE POTATO CHIP CO.	Berwick, Pennsylvania
JOHN BEAN DIVISION, FOOD MACHINERY CORP.	Lansing 4, Michigan
S. KENNEDY & SONS, Growers and Shippers of Potatoes and Onions	Clear Lake, Iowa
OLIN MATHIESON CHEMICAL CORP.	Mathieson Bldg., Baltimore 3, Maryland
AMERICAN AGRICULTURAL CHEMICAL CO.	Carteret, New Jersey
LOCKWOOD GRADER CORP.	Gering, Nebraska
EDWARD H. ANDERSON & CO.	1425 S. Racine Ave., Chicago, Illinois
E. I. DU DONT DE NEMOURS & CO. (INC.), Grasselli Chemicals Dept.	Wilmington 98, Delaware

# INDEX TO VOLUME 33

## Author and Title Index

- Akeley, R. V., F. J. Stevenson, D. Folsom, and R. Bonde. Breeding varieties of potatoes resistant to Verticillium wilt in Maine. 15-21.  
 —, see Cunningham, C. E.  
 —, see Stevenson, F. J.  
 —, see Haynes, Frank L.  
 Anderson, John C. Review of "Nellie Landblom's Copybook for Beginners in Research Work". 101  
 Ayers, G. W. The resistance of potato varieties to storage decay caused by *Fusarium sambucinum* in and *Fusarium coeruleum*. 249-254.  
 —, and D. B. Robinson. Control of fusarium dry rot of potatoes by seed treatment. 1-5.  
 Bagnall, R. H., R. H. Larson, and J. C. Walker. Three virus components of "Interveinal Mosaic". Irish Cobbler potato. 271-273.  
 Bennett, Grace, see Hester, E. Elizabeth.  
 Bonde, R., see Akeley, R. V.  
 —, see Webb, R. E.  
 Bushnell, John. Exploratory study of the rate of oxygen consumption by potato roots. 203-210.  
 —. Growth response from restricting the oxygen at roots of young potato plants. 242-248.  
 Carlin, Frances, see Scharf, Allen E.  
 Cash, Lillian C., see Houghland, G. V. C.  
 Casseres, Ernest H. Progress in cooperative potato improvement work in Costa Rica. 166-169.  
 Choudhuri, H. C. Storage tests for the control of diseases and insect pests. 6-14.  
 Cochran, Fred D., see Haynes, Frank L.  
 Cording, James, Jr., see Willard, Miles J. Jr.  
 Craft, C. C. Effects of some metabolic inhibitors on sugar accumulation in potato discs during partial desiccation. 259-264.  
 Cunningham, C. E., R. V. Akeley, and K. F. Nielson. Cooperative potato variety trials in Maine. 69-78.  
 Eastwood, Tom, and James Watts. The effect of nitrogen fertilization upon potato chipping quality. I. Chip color. 187-189.  
 —, and —. The effect of nitrogen fertilization upon potato chipping quality. II. Specific gravity. 211-213.  
 —, and —. The effect of potash fertilization upon potato chipping quality. III. Chip color. 255-257.  
 —, and —. The effect of potash fertilization upon potato chipping quality. IV. Specific gravity. 265-268.  
 Edwards, P. W., see Willard, Miles, J. Jr.  
 Ellis, N. K., see Wolcott, A. R.  
 Eskew, R. K., see Willard, Miles, J. Jr.  
 Folsom, D., see Akeley, R. V.  
 Fuhs, Jess L., see McAnnally, Charles W.  
 Gallegly, M. E. Potato fungicidal spray trials in West Virginia. 1950-1955 results. 274-280.  
 —, see Priston, R.  
 Garrett, Frank, see Johnson, W. A.  
 Hawkins, Arthur. Response of potatoes to fertilizer nitrogen in the northeast. 226-233.  
 Haynes, Frank, F. J. Stevenson, Robert V. Akeley and Fred D. Cochran. Boone—a new variety of potato resistant to late blight and adapted to western North Carolina. 315-318.  
 Haynes, F. L., see Stevenson, F. J.  
 Hester, E. Elizabeth, and Grace Bennett. Quality of pressure-cooked potatoes. 155-160.  
 Hodgson, W. A. Control of potato late blight with antibiotics. 185-186.  
 Hooker, W. J. Foliage fungicides for potatoes in Iowa. 47-52.  
 —, see Rieman, G. H.  
 Houghs, R. W. Foreign potatoes, their introduction and importance. 190-198.  
 —, and R. W. Ross. The use of foreign introductions in breeding American potato varieties. 328-339.

- Houghland, G. V. C., and Lillian C. Cash. Some physiological aspects of the potato scab problem. I. Acidity and aluminum, 89-91.
- , and Lillian C. Cash. Some physiological aspects of the potato scab problem. II. Calcium and calcium-potassium ratio, 235-241.
- Hoyman, Wm. G. A large inoculation chamber with automatic temperature and humidity controls, 214-217.
- Hurst, R. R., see Robinson, D. B.
- Johnson, W. A., John I. Wear and Frank Garrett. Effects of fertilizer and use of magnesium and minor elements on yields and storage quality of potatoes in Baldwin County, Alabama, 103-112.
- Kissmeyer-Nielson, E. Studies on the storage stability of C vitamin in potato granules at various moisture levels, 353-354.
- Kochinke, Marx F. Organizing a potato certification program in Brazil, 324-325.
- Krantz, F. A. see Riemann, G. H.
- Larson, R. H. Potato breeders and pathologists meet at the University of Wisconsin, 67.
- , see Bagnall, R. H.
- McAnnally, Charles W., Merle G. Payne, and Jess L. Fuhs. Detection of potato leaf roll by paper chromatography and electrophoresis, 134-140.
- Nielson, K. F., see Cunningham, C. E.
- Nyland, R. E. The use of 2,4-D to intensify the skin color of Pontiac potatoes, 145-154.
- Odland, T. E., and J. E. Sheehan. The response of Irish potatoes to different amounts and ratios of nitrogen, phosphoric acid, and potash when grown in continuous culture, 22-27.
- , see Sheehan, J. E.
- Payne, Merle G., see McAnnally, Charles W.
- Perlasca, Gerardo. Chemical control of sprouting in white potatoes, 113-133.
- Peterson, C. E., see Schark, Allen E.
- Pollard, L. H., see Salunkhe, D. K.
- Priston, R. and M. E. Gallegly. Differential reaction of potato hosts to foreign and domestic potato physiological races of *Phytophthora infestans*, 287-295.
- Pusateri, Francis P. Potato growing in California, 93-100.
- Reid, E. C. Potato growing in Peru, 355-360.
- Riemann, G. H., W. J. Hooker, F. A. Krantz and H. O. Werner. Potato improvement through parental line breeding, 319-323.
- Robinson, D. B., and R. R. Hurst. Control of potato blackleg with antibiotics, 56-59.
- , see Ayers, G. W.
- Ross, R. W., see Hongas, R. W.
- Salunkhe, D. K., and L. H. Pollard. A note on the color developments in potato chips, subsequent to growth of *Penicillium expansum* on the cut surfaces of potatoes, 92.
- Schark, Allen E., C. E. Peterson and Francis Carlin. The influence of variety on the specific gravity-maleness relationship of potatoes, 79-85.
- Sheehan, J. E. and T. E. Odland. A quarter century of potato variety trials in Rhode Island, 161-165.
- , see Odland, T. E.
- Sleesman, J. P., see Wilson, J. D.
- Smith, Ora. International potato club conference of northwest Europe, 141.
- , Recent developments in potato research in the United States, 60-66.
- Stevenson, F. J. Breeding varieties of potatoes resistant to diseases and insect injuries, 37-46.
- , Robert V. Akeley and F. L. Haynes. Plymouth, a new variety of potato, immune from the common race of late blight fungus, moderately resistant to common scab, and adapted to the tidelands of North Carolina, 296-299.
- , see Akeley, R. V.
- , see Haynes, Frank L.
- Sullivan, John F., see Willard, Miles J. Jr.
- Swan, J. D. Jr. Storing washed potatoes, 281-284.
- Treadway, R. H. Recent developments in processed potato products, 300-312.
- van Slogteren, D. H. M., see Vaughan, Edward K.
- Vaughan, Edward K., and D. H. M. van Slogteren. Potato virus-S in Oregon, 218-219.

- Waggoner, Paul E., Chemotherapy of verticillium wilt of potatoes in Connecticut 1955, 223-225.  
 —, Washing muddy potatoes, 269-270.  
 Walker, J. C., see Bagnall, R. H.  
 Wallin, J. R. Prediction of potato late blight incidence from samples of blighted seed tubers, 220-222.  
 Watts, James, see Eastwood, Tom.  
 Wear, John I., see Johnson, W. A.  
 Webb, R. E. and Reiner Bonde. Physiologic races of late blight fungus from potato dump-heap plants in Maine in 1955, 53-55.  
 Werner, H. O. Influence of atmospheric and soil moisture conditions on diurnal variations in relative turgidity of potato leaves (abstract), 285.  
 —, see Riean, G. H.  
 Willard, Miles J. Jr., James Cording, Jr., R. K. Eskew, R. W. Edwards, and John F. Sullivan. Potato flakes. A new form of dehydrated mashed potatoes. Review of pilot plant process, 28-31.  
 Wilson, J. D., and J. P. Sleesman. Depression of potato yields by Bordeaux mixture during a dry summer, 177-184.  
 Wolcott, A. R., and N. K. Ellis. Associated forms of internal browning of potato tubers in northern Indiana, 343-352.

### Subject Index

- Acidity and aluminum, see Physiological aspects.  
 Acreage marketing guides, 68.  
 American varieties, see Foreign introductions.  
 Announcement of annual meeting, 32.  
 Annual Meeting, see Program.  
 Antibiotics, see Blackleg.  
 — see Blight, late.  
 Baldwin County, Alabama, see Fertilizer.  
 Black leg control with antibiotics, 56-59.  
 Blight, late, control with antibiotics, 185-186.  
 — see Boone.  
 — see Differential reaction.  
 — see Inoculation.  
 — see Physiological races.  
 — see Plymouth.  
 — predictions from samples of blighted seed, 220-222.  
 Boone variety resistant to Late Blight and adapted to Western North Carolina, 315-318.  
 Bordeaux mixture, depression of potato yields during a dry summer, 177-184.  
 Breeders meet, see Potato breeders.  
 Breeding, varieties of potatoes resistant to Verticillium wilt in Maine, 15-21.  
 — varieties of potatoes resistant to diseases and insect injuries, 37-46.  
 — see Foreign introductions.  
 — see Potato improvement.  
 Brazil, see Potato certification.  
 Browning, internal, of potatoes in northern Indiana, 343-352.  
 C-Vitamin, see Storage stability.  
 Calcium and calcium-potassium ratio, see Physiological aspects.  
 California, see Potato.  
 Chemical control of sprouting in white potatoes, 113-133.  
 Chemotherapy of verticillium wilt in Conn, 223-225.  
 Chip color, see Nitrogen fertilization.  
 — see Potash fertilization.  
 Chip Week, see National.  
 Chipping quality, see Nitrogen fertilization.  
 — see Potash fertilization.  
 — see Storage.  
 Color developments in potato chips, subsequent to growth of *Penicillium expansum* on cut surfaces (a note), 92.  
 Color, see 2,4-D.

- Committee Members, 101-102.  
Connecticut, see Chemotherapy.  
Conference, see Utilization.  
Corky ring spot, see Browning.  
Costa Rica, see Potato improvement.  
Culture, see Irish potatoes.  
Dehydrated mashed potatoes, see Potato flakes.  
Developments in potato research in U. S., 60-66,  
in processed potato products, 300-312.  
Differential reaction of potato hosts to foreign and domestic potato physiologic races  
of *Phytophthora infestans*, 287-295.  
Digger, see USDA.  
Diseases, see Breeding.  
see Storage tests.  
Diurnal variations, see Atmospheric.  
Dutch potato Atlas (review), 200.  
Electrophoresis, see Leaf roll.  
Europe, see International.  
Farmers at the Crossroads (book review), 313.  
Fertilization, see Calcium.  
see Nitrogen.  
see Potash.  
Fertilizer and use of magnesium and minor elements on yields and storage quality of  
potatoes in Baldwin County, Ala., 103-112.  
Fertilizer nitrogen in the northeast, 226-233.  
F. J. Stevenson retires, 173-174.  
Flakes, see Potato.  
Foliage fungicides for potatoes in Iowa, 47-52.  
Food irradiation program, by AMF and Quartermaster Corps., 170.  
Foreign introductions, use in breeding American varieties, 328-339.  
Foreign potatoes, their introduction and importance, 190-198.  
Frozen food production up 67 per cent, 174-175.  
Fungicides, see Foliage.  
Fungicide Tests, 1955 (book review), 314.  
Fungicidal spray trials in West Virginia 1950-55 results, 274-280.  
Fusarium dry rot control by seed treatment, 1-5.  
*Fusarium sambucinum* f6 and *fusarium coeruleum*, see Resistance.  
Harvester, see potato.  
Holland, see Varieties.  
Humidity controls, see Inoculation.  
Inoculation chamber with automatic temperature and humidity controls, 214-217.  
Insect injuries, see Breeding.  
Insect pests, see Storage.  
Indiana, see Browning.  
Internal browning, see Browning.  
International potato club conference of northwest Europe, 141-143.  
Intervenal Mosaic, see Virus.  
Introduction, see Foreign.  
Iowa, see Foliage.  
Irish Cobbler potato, see Virus.  
Irish potatoes, response to nitrogen, phosphoric acid and potash when grown in  
continuous culture, 22-27.  
Irradiation, see Food.  
Landblom's, Nellie, Copybook for beginners in research work (book review), 101.  
Late blight, see Blight.  
Leaf roll detection by paper chromatography and electrophoresis, 130-140.  
see Boone.  
see Control.  
see Plymouth.  
see Prediction.  
Magnesium and minor elements, see Fertilizer.  
Maine, see Breeding.  
see Physiologic.  
see Potato.

- Marketing guides, see Acreage.  
Mealiness, see Specific gravity.  
Meeting, see Announcement.  
Metabolic inhibitors on sugar accumulation in potato discs during partial desiccation 259-264.  
Mosaic, see Virus.  
National Potato Chip Week, 314.  
National Potato Shrine planned, 327.  
Nitrogen, see Fertilizer.  
    see Irish potatoes.  
Nitrogen fertilization effect on potato chipping quality. I. Chip color, 187-189.  
Nitrogen fertilization effect on potato chipping quality. II. Specific gravity, 211-213.  
Oregon, see Virus S.  
Oxygen consumption by potato roots, 203-210.  
Oxygen restriction at roots of young plants effects growth, 242-248.  
Paper chromatography, see Leaf roll.  
Parental line breeding, see Potato improvement.  
*Penicillium expansum*, see Color.  
Peru, see Potato.  
Phosphoric acid, see Irish potatoes.  
Physiologic races of late blight fungus from potato dump-heap plants in Maine in 1955, 53-54.  
Physiological aspects of the potato scab problem. I. Acidity and aluminum, 86-91.  
Physiological aspects of the potato scab problem. II. Calcium and calcium potassium ratio, 235-241.  
*Phytophthora infestans*, see Differential reaction.  
Plymouth, variety immune from late blight fungus, resistant to common scab, adapted to tidelands of North Carolina, 296-299.  
Potato Atlas, see Dutch.  
    blackleg, see Blackleg.  
    breeders and pathologists meet at University of Wisconsin, 67.  
    certification program in Brazil, 324-325.  
    club, see International.  
    fertilization, see Irish.  
    flakes, a new form of dehydrated mashed potatoes, 28-31.  
    flakes to be tested, 171-172.  
    flakes, a new product—sell well in test, 360-361.  
    futures, see USDA.  
    granules, see Storage stability.  
    growing in California, 93-100.  
    growing in Peru, 355-360.  
    harvester demonstration, 172-173.  
    improvement in Costa Rica, 166-169.  
    improvement through parental line breeding, 319-323.  
    introduction, see Foreign.  
    research, see Developments.  
    roots, see Oxygen.  
    variety trials in Maine, 69-78.  
    variety trials in Rhode Island, 161-165.  
    yields depressed, see Bordeaux.  
Pontiac, see 2-4-D.  
Potash fertilization, effect on potato chipping quality. III. Chip color, 255-257.  
Potash fertilization, effect on potato chipping quality. IV. Specific Gravity, 265-268.  
Potash, see Irish potatoes.  
Program of 40th Annual Meeting, December 6-8, 1956, 340-342.  
Quality of pressure-cooked potatoes, 155-160.  
Quality, see Nitrogen.  
    see Potash.  
Quartermaster Corps, see Food.  
Research, see Developments.  
    see Landblom, Nellie.  
Resistance of potato varieties to storage decay caused by *Fusarium sambucinum* F6 and *Fusarium coeruleum*, 249-254.  
Rhode Island, see Potato.

- Roots, see Oxygen.
- Scab, see Plymouth.
- Scab problem, see Physiological aspects.
- Seed treatment, see Fusarium.
- Seed, see Blight.
- Skin color, see 2,4-D.
- Soil moisture, see Atmospheric.
- Specific gravity—mealiness relationship influenced by variety, 79-85.
  - see Nitrogen.
  - see Potash.
- Spray trials, see Fungicidal.
- Sprouting, see Chemical control.
- Stevenson retires, 173-174.
- Statistics, see Landblom.
- Storage decay, see Resistance.
- Storage quality, see Fertilizer.
- Storage if faulty can ruin chipping possibilities, 34.
- Storage stability of C-Vitamin in potato granules at various moisture levels, 353-354.
- Storage tests for control of diseases and insect pests, 6-14.
- Storing washed potatoes, 281-284.
- Sugar accumulation, see Metabolic.
- Temperature control, see Inoculation.
- Titles of papers, call for, 234 and 258.
- Turgidity, see Atmospheric.
- 2,4-D use to intensify skin color of Pontiac potatoes, 145-154.
- United States, see Developments.
- USDA announces guides for winter vegetables and winter potatoes, 312-313.
- USDA developed bladeless potato digger shows promise, 199-200.
- USDA report on potato futures marketing investigation, 32-33.
- USDA reports food marketing costs up, 34.
- Utilization Conference, 7th annual, 201.
- Varieties of potatoes in Holland, 326.
  - see Boone.
  - see Foreign.
  - see Plymouth.
  - see Potato.
  - see Specific gravity.
- Verticillium wilt, see Breeding.
  - see Chemotherapy.
- Virus components of Interviral Mosaic—Irish Cobbler potato, 271-273.
- Virus S in Oregon, 218-219.
- Vitamin C, see Storage stability.
- Washed potatoes, see Storing.
- Washing muddy potatoes, 269-270.
- West Virginia, see Fungicidal.
- White potatoes, see Chemical.
- Yields, see Bordeaux.
  - see Fertilizer.